

**Notice of Allowability**

Application No.

09/353,448

Examiner

Duc Nguyen

Applicant(s)

SAKATA ET AL.

Art Unit

2643

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 1/5/05.
2. ☒ The allowed claim(s) is/are 5-7 and 11-13.
3. ☒ The drawings filed on 14 July 1999 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
Duc Nguyen  
Primary Examiner  
Art Unit: 2643

### Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

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#### Listing of Claims:

Claims 1-4 (Canceled):

Claim 5 (Previously Presented): An echo canceller that eliminates echoes produced in an echo path formed between a loudspeaker that converts receiving signals into voice output and a microphone that converts voice input into sending signals, the echo canceller comprising:

an adaptive digital filter, designed to imitate transmission characteristics of the echo path, that generates pseudo echo signals responsive to a part of the receiving signals;

a subtracter that subtracts the pseudo echo signals from the sending signals containing echo noise that is input to the microphone from the echo path, to provide an echo canceled sending signal,

wherein tap coefficients of said adaptive digital filter are modified responsive to the part of the receiving signals and a part of the echo canceled sending signal; and

an attenuator that attenuates the sending signals containing echo noise so that

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an amplitude level of the echo noise matches an amplitude level of the pseudo echo signals, and that provides the attenuated sending signals to said subtracter as the sending signals for subtraction.

Claim 6 (Previously Presented): The echo canceller of claim 5, wherein said attenuator is a variable attenuator.

Claim 7 (Previously Presented): The echo canceller of claim 5, wherein said attenuator is a fixed attenuator.

Claims 8-10 (Canceled)

Claim 11 (Previously Presented): An echo canceller that eliminates echoes produced in an echo path formed between a loudspeaker that converts receiving signals into voice output and a microphone that converts voice input into sending signals, the echo canceller comprising:

an adaptive digital filter, designed to imitate transmission characteristics of the echo path, that generates pseudo echo signals responsive to a part of the receiving signals;

a subtracter that subtracts the pseudo echo signals from the sending signals containing echo noise that is input to the microphone from the echo path, to provide an

echo canceled sending signal,

wherein tap coefficients of said adaptive digital filter are modified responsive to the part of the receiving signals and a part of the echo canceled sending signal; and

an amplifier that amplifies the part of the receiving signals so that an amplitude level of the pseudo echo signals matches an amplitude level of the echo noise, and that provides the amplified part of the receiving signals to said adaptive digital filter as the part of the receiving signals,

wherein the loudspeaker converts the receiving signals that are not amplified by said amplifier.

Claim 12 (Previously Presented): The echo canceller of claim 11, wherein said amplifier is a variable amplifier.

Claim 13 (Previously Presented): The echo canceller of claim 11, wherein said amplifier is a fixed amplifier.

Claim 14 (Canceled)